Interactive Telecommunications Program  
Summer Session I  
May 23 to July 3, 2016

Creative Computing (Scott Fitzgerald)  
ITPG-GT 1000 (for graduate students)  
ITPG-UT 1000 (for undergraduate students)  
M/W 6:30pm -- 9:25pm

What can computation add to human communication? Creating computer applications, instead of just using them, will give you a deeper understanding of the essential possibilities of computation. Conversely excitement about your computational project ideas whether they be in the domain of art, design, humanities, sciences or engineering will best propel your acquisition of skills necessary to realize those ideas. This course will begin with the expressive capabilities of the human body and how we experience our physical environment. The Physical Computing skills will allow you to go past the limitations of the mouse, keyboard & monitor interface and at locations other than the home or the office. The platform for the class is a microcontroller (Arduino brand), a very small inexpensive single-chip computer that can be embedded anywhere and sense and actuate in the physical world. The core technical concepts include digital, analog and serial input and output. The second portion of the course focuses on fundamentals of computer programming (variables, conditionals, iteration, functions & objects) as well as more advanced techniques such as data parsing, image processing, networking, computer vision. The Java-based ‘Processing’ programming environment is the primary vehicle. Processing is more oriented towards visual displays on desktops, laptops, tablets or smartphones but can also connect back to the physical sensor & actuators from the first part of the class. The course is designed for computer programming novices but the project centered pedagogy will allow more experienced programmers the opportunity to play further with their project ideas and make lots of friends by helping the other students.

Note: This course is for non-ITP students.

Summer Session II  
July 5 to August 14, 2016

Agile Web Development: Creating Media For The Web (Craig Protzel)  
ITPG-GT 2558  
T/TR 12:10pm -- 03:05pm

This is a production-based course that will introduce students to the fundamentals of creating media for the web. With basic web development as a consistent backbone to the course, students will be exposed to a range of mediums and
technologies including 2D design, digital imaging, sound, video, animation, and effects. The forms and uses of these communications technologies are explored in a laboratory context of experimentation, collaboration, and discussion. Fundamentals of creative storytelling will be emphasized throughout with an ultimate goal of creating compelling content in the context of the web.

Much of class time will be spent introducing and playing with equipment and software essential to media production and contemporary web storytelling. Each technology is examined as a tool that can be employed and utilized in a variety of situations and experiences. Outside of the classroom, students will work both individually and in assigned groups on a variety of assignments. Each student will be expected to complete 5 assignments plus one cumulative final project. This course is open to all levels. No prior knowledge is necessary.

**Mashups: Creating with Web APIs (Craig Protzel)**
**ITPG-GT2611**
**M/W 12:10pm -- 03:05pm**

As the World Wide Web continues to grow and permeate our everyday lives, an ever-increasing amount of data and digital services are accessible to us through public web APIs - Application Programming Interfaces. Common to many web sites, including YouTube, Twitter, Google Maps, Wikipedia and more, web APIs offer a means to programmatically request and re-purpose endless troves of information. But how exactly do we access these datasets and services? How can we write code to transfer, store, and display this content on our own web sites? And how might we use these available resources to design unique, creative, and compelling web experiences of our own.

This class is about creating interactive single-page web applications that leverage public data and digital services from a wide range of existing web products. The overall goal of the class will be for each student to have 3 well-designed functional single-page web applications. Subscribing to a project-oriented approach, a majority of class time will be spent writing and reviewing code, primarily Javascript, for client-side (front-end) web development. We will use a number of Javascript libraries, including jQuery, Underscore, D3, p5, Popcorn and more, to help build a diversity of web experiences. Where server-side (back-end) development is required, we will use the Node-Express framework and Socket.io.

Students should have some programming experience as well as some exposure to basic client-side web development, specifically HTML and CSS. Experience with Javascript is a plus.

**Designing Social Platforms (John Kuiphoff)**
**ITPG-GT 2922**
**Tu/F 3:20pm -- 06:15pm**
Most social media platforms follow a similar recipe. A user signs up, creates a profile, contributes / shares content, posts comments, builds a reputation, etc. What makes each social media platform unique is the object of conversation, the intended purpose and the participatory culture that arises from its use. In this course, we will learn how to design and develop a fully functional social media platform using HTML, CSS, jQuery, PHP and MySQL. An emphasis will be placed on creating applications that operate both on desktop computers and mobile devices. In addition, topics related to information architecture, interface design, cloud computing and leveraging existing web services will be discussed. Previous programming experience is helpful, but not required.

**Video for New Media (Gabe Barcia-Colombo)**  
**ITPG-GT.2256**  
**M/W 6:30pm -- 9:25pm**  

In 1967 the Sony Portapak became the first portable video system available to the public. Suddenly motion pictures became accessible to artists, experimenters and social activists, not simply Hollywood production companies. The introduction of the Portapak had a great influence not only on the development of ITP but also on the way we create, consume and distribute media today. How do we create video that is non-linear yet compelling, interactive yet engaging? The goal of this class is to provide an overview of both the history of video, and its relevance to present day new media. Topics covered include aesthetics and concepts, camera usage, editing, lighting, as well as an introduction to interactive video software such as Jitter and Isadora. Through a series of weekly experiments and assignments, students gain experience with video blogging, short format documentary style, post linear narrative, interactive video installations as well as theatrical video design. Previous video experience is not required and experimentation is highly encouraged!